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**Faculty of Letters, Languages, and Social Sciences**

**Department of Letters and English Language**

**The difficulties faced by Down syndrome pupils in developing  
English speaking skill at primary level**

An extended essay submitted in partial fulfilment of the requirement for a  
master's degree in Didactics and Applied Languages

**Submitted by:**

Djihane  
MEKRANTER

**Supervised by:**

Kheira HADI

**Board of Examiners:**

<b>President</b>	<b>Dr. Ataouia IKHLEF</b>	<b>MCB</b>	<b>Belhadj Bouchaib Ain Temouchent University</b>
<b>Supervisor</b>	<b>Dr. Kheira HADI</b>	<b>MCA</b>	<b>Belhadj Bouchaib Ain Temouchent University</b>
<b>Examiner</b>	<b>Dr. Amina KERKEB</b>	<b>MCA</b>	<b>Belhadj Bouchaib Ain Temouchent University</b>

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## ***Dedications***

*I dedicate this modest end-of-study project to:*

*my parents “**MEKRANTER Djelloul**” and “**BEKHALED Amaria**” who have always been there for me throughout my university journey, to my grandparents (both paternal and maternal), my two brothers **Belhadri ISLAM** and **Mohiddine**, my sister **Ghania**, my aunts and uncles, cousins, and my dearest friends **Maissa**, **Malek**, and **Assmaa**, as well as to all those who have helped me, whether directly or indirectly.*

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## **Abstract**

Inclusive education has become a crucial aspect of modern pedagogy. Among these learners are pupils with Down syndrome, who often face challenges in acquiring foreign language skills, particularly in speaking English. These challenges are rooted in both cognitive and linguistic difficulties. It aims to explore the difficulties faced by primary school pupils with Down syndrome in developing English-speaking skills. Specifically, it investigates the linguistic and educational barriers encountered by these learners throughout their language learning process, such as limited verbal expression, delayed speech development, speech production issues, auditory processing difficulties, and memory retention problems. It also examines how social interactions with peers and teachers influence their speaking abilities, either by facilitating or impeding progress. In addition, the research evaluates the effectiveness of existing teaching methodologies and materials in addressing the specific learning needs of these pupils and seeks to identify practical strategies to enhance their language acquisition. To achieve these objectives, two data collection tools were employed: a questionnaire administered to 58 Primary school's English teachers working across Ain Témouchent, and an interview with eight of them. The responses were analyzed using both quantitative and qualitative methods. The findings shows that the majority of teachers consider the current curriculum design inadequate for meeting the needs of pupils with Down syndrome, highlighting a lack of specific strategies and appropriate training for educators. They emphasize the importance of teacher training programs. Furthermore, the study recommends evidence-based interventions such as multisensory learning techniques, assistive technology, and individualized instruction to support and enhance language development. By addressing these areas, the research seeks to improve the effectiveness of English language for pupils with Down syndrome.

**Keywords:** Down syndrome, obstacles, curriculum, English speaking abilities

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## **List of Abbreviations and Acronyms**

EEG	Electroencephalography
ERPs	Event-Related Potentials
FMRI	Functional Magnetic Resonance Imaging
MEG	Magnetoencephalography
PET	Positron emission tomography
LAD	language acquisition device
EFL	English as a Foreign Language
TEFL	Teaching English as a Foreign Language
DS	Down Syndrome

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# **General Introduction**

### General introduction

Down syndrome is a genetic condition that effect cognitive and physical development that often lead to challenges in communication and learning, when learning English as a second language, pupils with Down syndrome may face difficulties such as limited vocabulary retention, speech articulation issues and slower processing of grammatical structures.

Language development is the key of human communication and plays a role in cognitive, social and emotional growth. Down syndrome a genetic condition caused by the presence of an extra chromosome 21, is associated with distinct developmental profiles that influence language acquisition. Despite their challenges, children with Down syndrome Often exhibit strengths in social communication and a strong desire to engage with others. The primary level is a critical stage for intervention, as early and effective support can result to more significant language development and better long-term outcomes .

This research tries to explore and investigate the specific difficulties faced by primary school pupils with Down syndrome in developing English speaking skills and to examine cognitive, linguistic, and environmental factors contributing to these challenges and analyze existing teaching methodologies and interventions

This present study seeks to provide practical recommendations for educators to support the linguistic growth of children with Down syndrome effectively

The current investigation raises the following questions :

1 - What challenges do pupils with Down Syndrome face in developing English speaking skills ?

2 - What teaching strategies enhance the recognition and production of phonemes in pupils with Down Syndrome ?

## General introduction

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3 - What are the long-term outcomes of interventions aimed at improving English speaking skills in pupils with down syndrome ?

To obtain credible and logical answers to the stated questions, the following hypotheses have been formulated :

1 - Pupils with Down syndrome face challenges in developing English speaking skills due to cognitive impairments affecting memory, auditory processing, and articulation

2 - Significantly enhancing the recognition and production of phonemes Leveraging Down syndrome visual and auditory learning strengths by multisensory and phoneme-focused teaching strategies

3 - Early and consistent language interventions lead to measurable improvements in vocabulary, speech clarity, and social communication skills in pupils with Down syndrome

This study attempts to examine the specific difficulties faced by pupils with Down syndrome primary school level in developing English speaking skills, it will focus on factors and the influence of environmental factors such as teaching methods, classroom dynamics, and parental involvement. It will also explore potential strategies and interventions that can help improve the English-speaking abilities of pupils with Down syndrome .

This research study is divided into three chapters. The first chapter is a literature review; it addresses the definitions of major terms and key concepts, which are: Language learning, phonetics, phonology and Down syndrome. The second chapter concerns the practical side of the research work. It outlines the methodological approach. It aims to represent the primary schools in Ain Temouchent that holds Down syndrome pupils. The last chapter entails the analysis, discussion, and interpretation of the obtained data and research findings that were collected through questionnaires and interviews It seeks to either confirm or disprove the hypotheses formulated in this study. It also provides suggestions and recommendations for

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enhancing language proficiency and mitigating challenges associated with this language policy shift. The chapter ends by discussing the limitations of the research work.

**Chapter one**

**Theoretical Framework &**

**Literature Review**

# Chapter One: Theoretical Framework & Literature Review

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### 1.1 Introduction

The child with Down syndrome develops a variety of skills. Furthermore, recent decades have seen children's rights and the rights of persons with disabilities come to the fore. Nevertheless, children with Down syndrome need special attention from their teachers, parents and society. Simply without any kind of segregation especially in education; However, this study aims to investigate the integration of children with Down syndrome in main stream Algerian primary schools. To do so , this chapter is divided into three parts. The first part is about linguistics; the second part is concerned with theoretical perspectives on language learning acquisition and phonetics; the third part discuss about Down syndrome and their learning challenges.

### 1.2 Psycholinguistics

Psycholinguistics examines cognitive processes such as attention and memory. Baddeley (2003) states: "Cognitive functions like working memory and attention are integral to real-time language processing" (p.189). Psycholinguistics is the bridge between Linguistics and psychology as Garnham (1985) stated: "Psycholinguistics is the study of the mental mechanisms that make it possible for people to use language. it is a scientific discipline whose goal is coherent theory of the way in which language is produced and understood. "(p. 43) An important focus of psycholinguistics is the largely unconscious application of grammatical rules that enable people to produce and comprehend intelligible sentences.

Psycholinguists investigate the relationship between language and thought, a perennial subject of debate being whether language is a function of thinking or thought a function of the use of language. However, most problems in psycholinguistics are more concrete, involving the study of linguistic performance and language acquisition, especially in children. The work

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of Noam Chomsky and other proponents of transformational grammar have had a marked influence on the field. Neurolinguistics study the brain activity involved in language use, obtaining much of their data from people whose ability to use language has been impaired due to brain damage. While linguistics studies the structure of natural language, psycholinguistics studies how people process natural language. A review of previous research will show that humans have a propensity for language that is far greater than any other species. Some argue that the complexity of human language is a reflection of the human mind's vast cognitive ability, and many believe that language is special and interestingly different from any other cognitive function.

### **1.2.1 Research Methods in Psycholinguistics**

Psycholinguistic research employs a diverse array of methods to investigate language processing, combining cognitive psychology, linguistics, and neuroscience. Behavioral methods like lexical decision tasks, priming experiments, and self-paced reading measure reaction times and accuracy to understand word recognition and sentence comprehension. Eye-tracking techniques, such as reading studies and the visual world paradigm, reveal real-time language processing through gaze patterns. Neuroimaging methods, including EEG, ERPs, fMRI, and MEG, provide insights into the brain's response to linguistic stimuli. Computational and corpus-based approaches analyze large text datasets and create models to simulate human language processing. Additionally, developmental and comparative studies examine language acquisition in children and non-human species. Combining these methods allows researchers to build a comprehensive understanding of how the mind processes language

### **1.2.2 Applications of Psycholinguistics**

Psycholinguistics plays a crucial role across multiple disciplines, including language acquisition, artificial intelligence, and clinical therapy. In education, it underpins language

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teaching methods, improving literacy outcomes. Clinically, it aids speech therapists in diagnosing and treating conditions like aphasia and dyslexia. psycholinguistic insights enhance natural language processing. Additionally, forensic linguistics applies psycholinguistic theories to analyze speech and authorship in criminal investigations. These diverse applications highlight psycholinguistics' significant impact on understanding and enhancing human communication

### **1.3 Neurolinguistics**

Aithor (2025) stated: “Neurolinguistics is concerned with the biological or neural bases of language processing. ... The study of developmental neurolinguistics seeks to determine how the brain ages into its mature capacity for language. ... With this model, we will be better able to understand both the types of neurolinguistic mechanisms that need to mature for a developing brain to acquire language and the functions of the mature neurolinguistic system.” (p. 2). Simply put, neurolinguistics studies neural systems in the brain that control language acquisition, comprehension, and production. The main intention of the field of neurolinguistics is to understand and explain the neurological bases of language and speech, and to characterize the mechanisms and processes involved in the use of language (Nuessel, 2006). The study of neurolinguistics is vast; it includes language and speech disorders, aphasias in adults and in children, as well as reading disorders and lateralization of function with respect to language and speech processing (Aminoff et al., 2013; Stavrakaki, 2005).

#### **1.3.1. Language Representation in The Brain**

Scoresby-Jackson speculated that Broca's area was responsible for the representation of a subject's mother tongue, whereas the portions anterior to Broca's area were responsible for foreign language acquisition (Scoresby-Jackson, 1867)

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Broca's area, located in the inferior frontal lobe of the dominant hemisphere, typically the left, is crucial for language processing and production. This area is connected to various brain regions and is specialized in different aspects of understanding. The anterior portion aids in semantics, while the posterior is associated with phonology. Broca's area is involved in word repetition, gesture production, sentence grammar and fluency, and comprehension of actions. Damage to this area can result in Broca's aphasia, characterized by a reduction in spontaneous speech, loss of grammatical structure, and impaired repetition<sup>8</sup>. However, the words spoken are usually understandable and contextually appropriate, and comprehension remains intact in pure Broca's aphasia

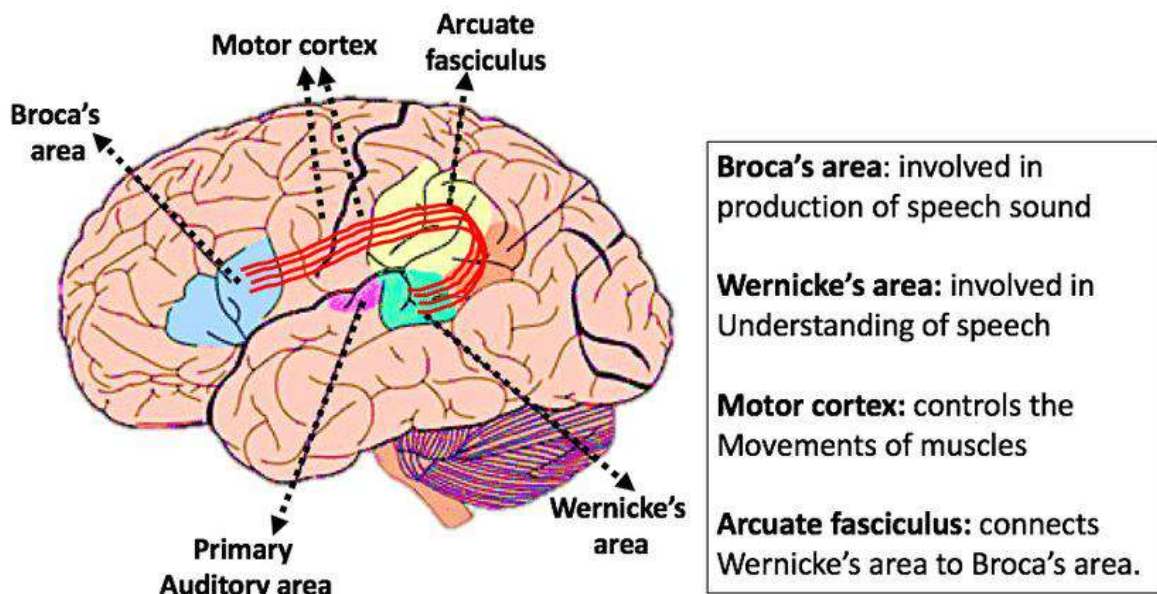
Wernicke's area, discovered by Carl Wernicke in 1874, is a crucial region in the dominant hemisphere (typically the left) responsible for processing both written and spoken language. Damage to this area results in Wernicke's aphasia, also known as receptive aphasia, which is characterized by fluent speech that often lacks meaning due to paraphrastic errors. These errors can be semantic, where one word is substituted for another (e.g., "Chair" for "table"), or phonemic, where a sound or syllable is replaced (e.g., "cat" for "hat"). People with Wernicke's aphasia have impaired language comprehension, and like Broca's aphasia, repetition is also impaired. They may produce grammatically correct sentences with a normal rate and prosody, but the content may not make sense, and they may be unaware of their errors

### **1.3.2. Neuroimaging and Language Processing**

Neuroimaging techniques led us to understand more and deeply the brain's role in language processing for example fMRI (functional magnetic resonance imaging) and PET (positron emission tomography). These methods make it easy for researchers to observe brain activity in real time, showing which area is responsible for different linguistic functions, it has been shown that while learning a second language a grey matter density in the left inferior

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parietal cortex. Neuroimaging helps doctors to understand how the brain recovers language after a stroke, when the left hemisphere of the brain gets damaged, the right hemisphere helps the left one to regain their ability to speak



### Parts of the Brain that controls Speech

Figure 1.1 : Language specific areas in the brain (

[/https://thinkpalm.com/blogs/the-technology-behind-translating-brain-scans-to-speech](https://thinkpalm.com/blogs/the-technology-behind-translating-brain-scans-to-speech) )

### 1.3.3 Theories and Models in Neurolinguistics

Neurolinguistics is the investigation of brain language processing according to theory and model. The Wernicke-Geschwind Model names areas of the brain, such as Wernicke's area for comprehension and Broca's area for speech production, damage to which causes aphasia. The Dual-Stream Model by Hickok and Poeppel (2007) divides language processing into a dorsal stream for speech production and a ventral stream for meaning processing. The Declarative-Procedural Model (Ullman, 2001) states that vocabulary is declarative memory (temporal lobe)-based, yet grammar is procedural memory (frontal and basal ganglia regions)-

based. Connectionist Models elaborate that language is processed via networks of neurons and not distinct brain sites. In addition, Hebbian Learning Theory clarifies that repeated exposure to language strengthens neural paths, which supports learning and rehabilitation following brain damage. These models enlighten researchers on language disorders, brain plasticity, and effective strategies of rehabilitation

### **1.4 Language Acquisition vs Language Learning**

language is the primary tool for expression and communication, which includes the use of four skills; listening, speaking, reading and writing. This set of four capabilities allows the individual to comprehend and produce language, namely acquiring and learning a language.

Language acquisition is a universal process, and according to Limacher (2018), it occurs when human beings acquire their first language through an innate subconscious procedure with a complete unawareness of grammar rules. In an early age, humans start building up their vocabulary and establishing the language rules via natural communication with their careers, including the family members or the caregivers, who transmit their language through verbal communication which refers to the use of words, and nonverbal communication such as body language and gestures, leading the child to acquire his/her environment's language. In this vein, several theories have been put forward to explain the process of language acquisition, including behaviorist, innateness, cognitive learning, and interactionist. B. F. Skinner (1957) proposed the behaviorist theory that is based on a behaviorist psychological experiment on animals that perform various tasks by encouraging habit-forming, it suggests that children imitate the language of their parents or careers, through the positive reinforcement of their correct utterances. (Cited in Theories of language acquisition - Montsaye Academy) In

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1959, Noam Chomsky in his review of B.F. Skinner's *Verbal Behavior*, introduced the innateness theory, that is based on the idea that the child's brain contains special language-learning mechanisms at birth, more like an inborn faculty for language acquisition, this faculty has become known as the language acquisition device (LAD). Jean Piaget (1936, 1950) came up with a theory of cognitive development suggests that intelligence changes as children grow, and language is just one aspect of a child's overall intellectual development. He stated that children must first comprehend a notion before acquiring the language they will use to express that notion.

Jerome Bruner (1980) came up with the interactionist theory, in which he indicated that children learn language out of a desire to communicate with the world around them, since language exists to allow communication, and can only be learned by interaction with other people. In other words, the adults' language behavior when talking to children, is specially adapted to assist the acquisition process, causing the appearance of the language acquisition support system. On the other hand, Limacher (2018) stated that language learning is a conscious process of expanding the capacity of communication, that is based on clear directions of rules, it is common in formal settings like classrooms, with the guidance of a teacher who transmits his/her knowledge to the learners, including the sound system and the structure of the new language. One of the widely known theories that have been proposed to explain the process of language learning, is Stephen Krashen's Monitor theory (1981, 1982, 2003), which consists of five main hypotheses including the Acquisition Learning hypothesis that is based on the 'acquisition' and 'learning' as ways to develop the learner's capacity. The second hypothesis is the Monitor hypothesis (1981) which shows that the main purpose of grammar rules is monitoring or controlling, these rules are used consciously to correct errors.

As a result, the language learned consciously is only available as a kind of control, while acquisition results in the fluent and simple production of language. The third hypothesis is the

Input hypothesis (2003) which refers to the subconscious acquisition, it is based on the idea that language is acquired through the comprehension of spoken or written language. The fourth hypothesis is the Affective Filter hypothesis (1981, 1982) which focuses on the influence of affective factors on language acquisition, including motivation, confidence and anxiety. And finally, the Natural Order hypothesis which presents the idea that linguistic rules are picked up in a regular order during the process of learning, with some coming earlier than others. (Cited in Dendane, 2020)

### **1.5 English as a Foreign Language in Primary School**

Early acquisition of Foreign Languages (EFL) in primary schools has been a prominent research area worldwide. Early learning of English provides cognitive, linguistic, and social benefits, preparing early learners for higher education and career development. Studies show that young learners have more language acquisition potential due to brain plasticity, allowing them to learn and retain new information more effectively. This enhances memory, problem-solving skills, creativity, and critical thinking. Early exposure to English also allows children to attain improved pronunciation and fluency because younger learners are more proficient at mimicking sounds and perceiving the form of language instinctively. Furthermore, learning a second language at an early phase fosters cultural awareness and global orientation, making pupils more open to diversified perspectives and global communication as Penfield and Roberts (1959) stated “The earlier a child is exposed to a second language, the greater their ability to develop native-like pronunciation and fluency.” (p.58)

#### **1.5.1 Challenges in Teaching English as a Foreign Language in Primary School**

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Despite these advantages, several challenges must be addressed to ensure effective EFL learning. One major issue is limited resources, such as insufficient textbooks, technological tools, and appropriate learning materials, which can hinder language acquisition. It is Nunan (2003) who maintains that "Successful language learning demands access to quality educational materials and qualified instructors able to accommodate varied learning styles." Additionally, low numbers of adequately trained teachers with specialist expertise in early childhood language education can compromise the quality of teaching because not all teachers have the necessary linguistic and pedagogical expertise

Another difficulty is large class sizes, which make it difficult for the instructor to provide individual attention and quality interaction time for each learner. With reduced practice in speaking and reduced one-on-one feedback, learners may find it challenging to move forward in their language abilities. As Krashen (1982) suggests in the Input Hypothesis: "Comprehensible input and meaningful interaction are essential for successful second language acquisition." Furthermore, the lack of exposure to English outside the classroom prevents students from being able to reinforce classroom learning with life experience, which is crucial for language retention. Parental support is also crucial in learning a language, but in the majority of cases, the parents themselves might not be proficient in English and therefore might not be able to support their child's learning process at home" (p.451). Lightbown & Spada (2006) point out that: "Children benefit greatly when parents actively participate in language learning, even if they do not speak the language fluently." (p.221) Student motivation and engagement can also be a problem, as young learners tend to lose focus on language lessons quickly, particularly if pedagogy is not interactive or engaging enough. In order to overcome these challenges, schools are able to implement communicative teaching approaches that encourage interaction through role-playing, storytelling, and group work. The use of multimedia resources, including instructional videos, songs, and interactive language games,

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can be used to make learning more fun and effective. Creating an immersive learning environment by incorporating English into daily classroom instructions and infusing the language into other subjects of study like science and art can also serve to reinforce language acquisition. TEFL describes English language programs that occur in countries where English is not the primary language. For some jobs, the minimum TEFL requirement is a 100-hour course; however, the 120-hour course is strongly recommended as it often yields higher-paying teaching positions. TESL and TESOL include English language programs that occur in English-speaking countries (Divine, Betsy.2020). By surmounting these obstacles and introducing enjoyable, interactive forms of teaching, primary schools can ensure successful English learning, equipping students with the basic language abilities required to prosper in an increasingly globalized world.

### **1.5.2 Cultural Considerations**

**Cultural Relevance:** Teaching materials and examples should reflect the students' cultural backgrounds while introducing aspects of cultures where the target language is spoken

**Resistant to Cultural Imperialism:** All activities during the teaching process must respect the values of other languages and culture without any tendencies towards cultural domination and suppression

**Contextual Teaching and Learning:** It would encourage learners to better connect with local contexts of which they have rich exposure while teaching

**Cross-Cultural Competency:** In that manner, educating learners on cultures around the globe so as to bring a rich competence for inter-culture communication adds richness to it

## **1.6 Phonetics and Phonology**

### **1.6.1 Phonetics**

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Phonetics is the investigation of human speech sounds, their production, transmission, and perception, as a linguistic subdiscipline. It is extremely significant in language learning, pronunciation accuracy, and speech perception. Phonetics is also divided into three general categories: articulatory phonetics, which is concerned with how speech sounds are produced by the vocal tract; acoustic phonetics, which is concerned with the physical properties of sound waves; and auditory phonetics, which is concerned with how sounds are perceived by the human ear and brain. Phonetics is crucial to language learners as it improves listening and pronunciation, particularly in the context of English as a Foreign Language (EFL). According to Ladefoged & Johnson (2014), "Phonetics provides the foundation for understanding spoken language, bridging the gap between written symbols and speech sounds."(p.78) Because English pronunciation varies widely among dialects and accents, phonetics is a necessary tool in order to achieve clear and effective communication. Phonetics is also applied in the research of speech therapy, linguistics, and artificial intelligence, thus a fertile area of study both theoretically and practically

### **1.6.2 Difficulties in Learning Phonetics**

Learning phonetics is problematic in many ways since speech sounds are very complex in nature and production. Some of the general problems the learner faces are as follows:

**Articulatory Complexity:** The human vocal apparatus has the capacity to produce a wide variety of sounds, most of which are unfamiliar to the learner. Discriminating between the sounds which don't exist in the learner's native language-aspirated and unaspirated stops-is rather difficult.

**Discrimination of Hearing:** This is an important skill in phonetics: finding out the difference between similar phonemes. Normally, students often get confused when hearing acoustically similar sounds-for example, /i:/ and /ɪ/ in English.

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**Phonetic Transcription:** Students must study the many symbols of the International Phonetic Alphabet along with their sounds in order to learn how to apply this skill; beginners will find it burdensome.

**Native Language Interference:** The learners' native language frequently interferes in their perception and production of foreign speech sounds. For instance, a French person can hardly articulate the /h/ English sound.

**Inadequate Exposure and Practice:** Phonetic training calls for continuous exposure to a different kind of languages and accents. When this practice does not occur consistently, learners can hardly develop their pronunciation and listening features correctly.

### 1.6.3 Phonology

Phonology is the study of systematic organization of sounds within languages. Unlike phonetics, phonology emphasizes more on the function that sounds play within a particular language or language. **Phonemes and Allophones:** Phonology identifies the distinct sounds (phonemes) that help distinguish meaning in a language and their variants, also known as allophones. For instance, the English phoneme /p/ has aspirated allophones ([p<sup>h</sup>]) and unaspirated allophones ([p]) depending on the position of /p/ within a word. **Phonological Rules:** These are the rules defining how phonemes are realized in varying contexts. For example, in English, the plural morpheme will be expressed either as /s/, /z/, or /ɪz/ depending on the noun's final sound. **Syllable Structure:** Phonology develops an understanding about how sounds are structured into syllables and also the typical constraints about syllable building. Thus, for example, in some languages, consonant clusters will be limited at the beginning or end of a syllable. **Prosody:** This domain of phonology deals with stress, intonation, and rhythm patterns. Such suprasegmental features assist in generating natural flow and meaning in speech. **Phonological Processes:** Processes like assimilation, elision, and epenthesis account for why

such similar changes often occur in connected speech. 'Handbag' is often realized as [ 'hænbæg] in informal English

### 1.6.4 Applications of Phonetics and Phonology

Phonetics and phonology have innumerable practical applications in all spheres:

**Language Teaching:** Understanding phonetics helps language teachers guide students to produce accurate pronunciation. Phonological awareness enhances the students' ability to decode words and achieve fluency

**Speech Therapy:** Phonetics is essential for diagnosing and treating speech disorders. Speech therapists use phonetic transcriptions in analyzing speech patterns to design effective interventions

**Linguistic Research:** Phonetics and phonology are very important in language analysis and documentation, especially for endangered languages. They help in dictionary creation and understanding language change

**Technology Development:** Speech recognition systems, text-to-speech software, and language learning apps rely on phonetic and phonological principles to work effectively

**Forensic Linguistics:** Phonetic analysis is used in criminal investigations to identify speakers in voice recordings, providing critical evidence in legal cases

**Accent and Dialect Studies:** These disciplines are focused on regional and social variation in speech and have played a great role in contributing to sociolinguistic research and culture preservation

### 1.7 Down Syndrome

## **Chapter One: Theoretical Framework & Literature Review**

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Down syndrome, more officially identified as trisomy 21, is a condition attributed to having one additional copy of chromosome number 21. In an affected person, it shows altered physical growth and impaired brain performance, which might influence behavior as well. Originally noted in 1862 by a British doctor, Dr. John Langdon Down, it has subsequently captured most attention in both the field of medicine and that of psychological studies. Individuals with Down syndrome may also experience developmental delays in various degrees, but most individuals with the condition often lead normal lives, especially with proper support and intervention. This paper looks at the genetic causes, physical characteristics, cognitive implications, and social impact of Down syndrome, focusing on recent research and perspectives

### **1.7.1 Genetic Causes of Down Syndrome**

Down syndrome is caused mainly by a genetic abnormality in which a person has three copies of chromosome 21 instead of the usual two. The condition results from one of three genetic variations: trisomy 21, mosaic Down syndrome, and translocation Down syndrome. The most common form is trisomy 21, at about 95%. Trisomy 21 happens when the individual has inherited an extra copy of chromosome 21 in every cell of his or her body due to a nondisjunction incident during cell division. Mosaic Down syndrome, occurring in about 1% of individuals with Down syndrome, is characterized by some cells having the typical number of chromosomes and others having three copies of chromosome 21. This form of Down syndrome often results in a less severe phenotype. Translocation Down syndrome occurs when a part of chromosome 21 becomes attached to another chromosome. This occurs during the formation of egg or sperm cells. Though rare, translocation accounts for approximately 4% of the cases (National Down Syndrome Society, 2023). As Lejeune (1959) stated: "The additional chromosome is the determining factor in the developmental anomalies that characterize Down syndrome, affecting both physical and mental features of affected individuals" (p.98)

### 1.7.2 Physical Features of Down Syndrome

There are several physical features common among those with Down syndrome that can lead to a diagnosis. Not everyone with the condition will demonstrate all of the following, but some common features include: Facial features: flat facial profile, upward-slanting eyes, small ears, short neck. Muscle tone: low muscle tone, sometimes called hypotonia; this may delay some motor functions like learning to walk and sit.

Shorter height: most individuals with Down syndrome have shorter stature in comparison to others. Single palmar crease: Most individuals with Down syndrome have a single crease across their palms, referred to as a simian crease, which again is a characteristic feature in the majority of individuals with the condition

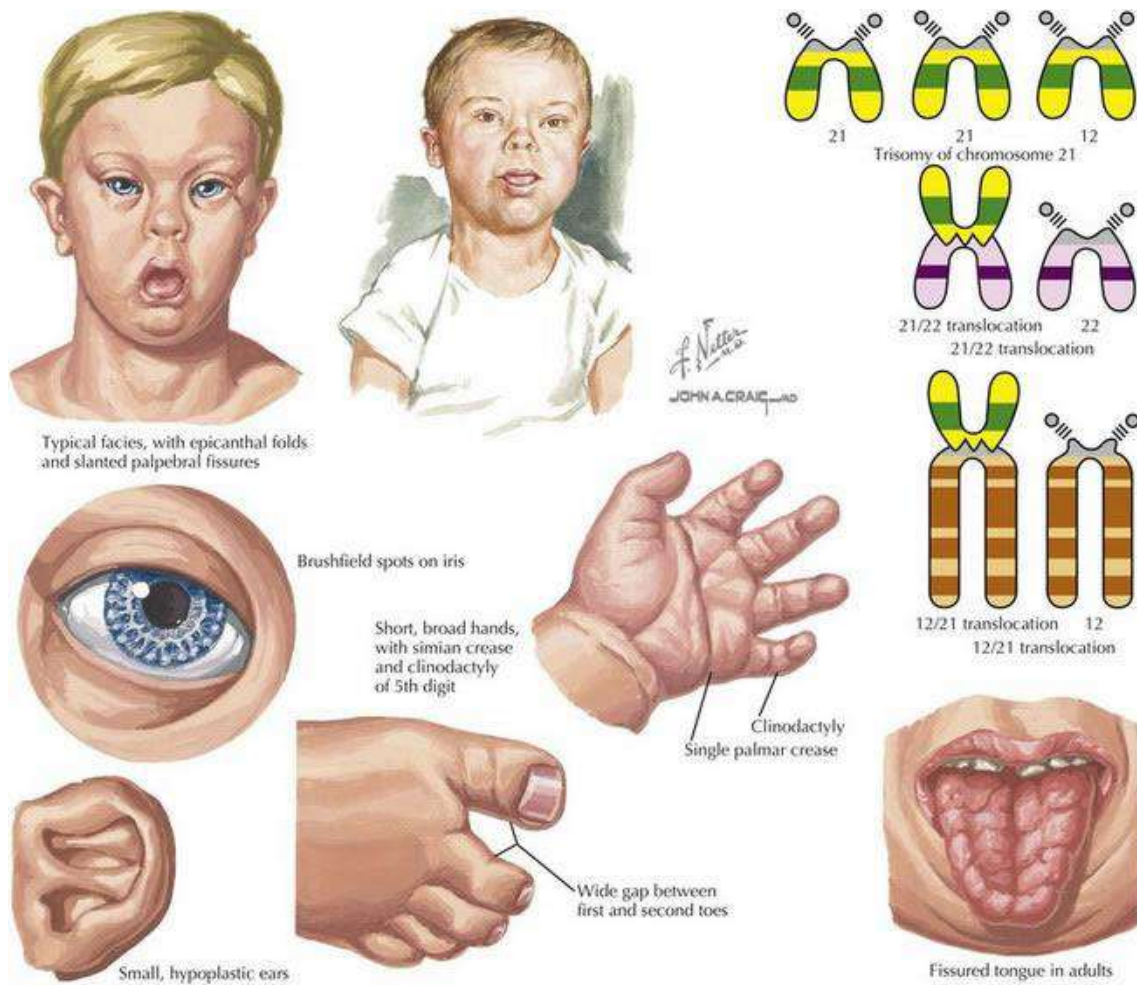


Figure 1.2 : TYPICAL TRAITS ASSOCIATED WITH DOWN SYNDROME (

<https://www.camphill.org.za/articles/what-exactly-is-down-syndrome> )

### 1.7.3 Health Implications

Down syndrome or trisomy 21 is a chromosomal abnormality caused by an extra number of chromosome 21. Growth retardation, mental retardation, and diseases are caused as a result of this abnormality. Down syndrome patients are likely to have congenital heart disease, gastrointestinal illness, and endocrine disorders like hypothyroidism. They typically experience loss of vision and hearing, sleep apnea, and obesity owing to a slower metabolic rate. There is also an extremely close link between Down syndrome and early-onset Alzheimer's disease, with symptoms occurring much earlier than in the general population.

Despite these challenges, early intervention therapies, special education, and medical advances have significantly improved life expectancy and quality of life for people with Down syndrome, allowing many to live into their 60s. Regular healthcare access, inclusive education, and community support are essential to help them achieve their full potential and well-being

### **1.7.4 Pronunciation Challenges in Down Syndrome**

Children with Down syndrome have their phonological systems influenced by a variety of factors which are capable of leading to difficulties in perceiving and producing speech, it was affirmed by Buckely (2001) he have their memory impaired due to their genetic disabilities, he clarified the average number of things to be retained in their memory is 7 Jarrold and Chapman (2000), perhaps idea about their success in short memory may be due to their physical or mental disabilities, including hearing impairment, 78 % of the children he tested were to have hearing difficulties in both ears and speech articulation difficulties, despite a great deal of individual variation, most children are slow to say their first words, their vocabulary develops more slowly than in normal children and although they use the same inventory of two-word phrases as all children, they have difficulty in mastering the many rules for talking in grammatically correct sentences .

Memory is an important faculty for acquiring language it should be brought into consideration when teaching Down syndrome children. As has already been mentioned, Down syndrome individuals have some difficulty in acquiring their first language due to their disability, Children with Down syndrome are expected to be cognitively delayed, to be slower in developing their awareness and knowledge of the world and to reason and recall. Down syndrome children, due to their disabilities encounter some difficulties in acquiring their mother tongue language in the author hand these problems during the acquisition and the interaction with the environment will influence the learning process and rate of these children.

## Chapter One: Theoretical Framework & Literature Review

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Despite the disabilities of Down syndrome that they will have to deal with throughout their life, down syndrome children don't have only weaknesses when it comes to the learning process as in the complex process but strengths when it comes to learning skills, Down syndrome students seem to learn more when it comes to reading and understanding vocabulary than in production and syntax. Foremost, Rondal's work (1995) will serve as the core work to depict the linguistic profile of individuals who have Down syndrome in his book accurately describe the profile, taking into consideration phonology and sound production, Down syndrome start babbling at the same time as any other child, but there are delays when Down Syndrome babies start talking (Chapman 1997), The speech impairment Down syndrome babies experience is due to the physiognomy of the organs of speech, in addition, an understanding of the way in which sounds pronouncedly affects the reading skill known as phonological awareness. In this respect, individual variation has been noted in Down Syndrome learners. Fletcher and Buckley (2002) "although most children with Down syndrome did poorly on tasks of phonological awareness, some children achieved perfect scores" (p.12). further, while describing the reading skills it has been pointed out that reading comprehension is less impaired in Down syndrome children, they first employ logo graphic strategy and then alphabetic and orthographic one, they find it complex, hence, it has been advised that they employ other strategies for reading Fletcher and Buckley (2002) but the benefits of reading in these children make them aware of the sound of phonemes because reading started from the building of spelling capacity. Other than with reading down syndrome subjects have problems with the acquisition of syntax and grammar in the first and last stage of acquisition, Ronald claimed that their sentences are short and simple because neither verb tenses nor verb inflection appears to be right leading to grammatical errors, According to Rondal (1995):"there was less than one article per utterance and slightly over one inflection marking gender or number on the noun phrase in two utterances". (p.9)

## Chapter One: Theoretical Framework & Literature Review

Vocabulary acquisition in DS subjects has been viewed as a strength due to the positive results of this kind of skill. These subjects are strongly capable of understanding of the lexicon while production is destined to be delayed (Rondal 1995), but Chapman (1997) highlights the resemblance of vocabulary production between DS and normally developing children. The majority of critics of the subject highlight that Down syndrome children accomplish more in closed-class vocabulary pronouns, determiners, prepositions, etc. instead of open-class vocabulary, nouns, adjectives, adverbs, or verbs. It must be mentioned that verbs have a certain function in this disorder, as Loveall et al (2016) said " people with Down Syndrome may have difficulty accessing instead of comprehending verbs, despite the fact that they are able to access event contexts and roles associated with the verb" (p.162), though there is debate and disagreement on verb development, it may be noted that the acquisition of nouns and other open-class vocabularies may be simpler than verbs.

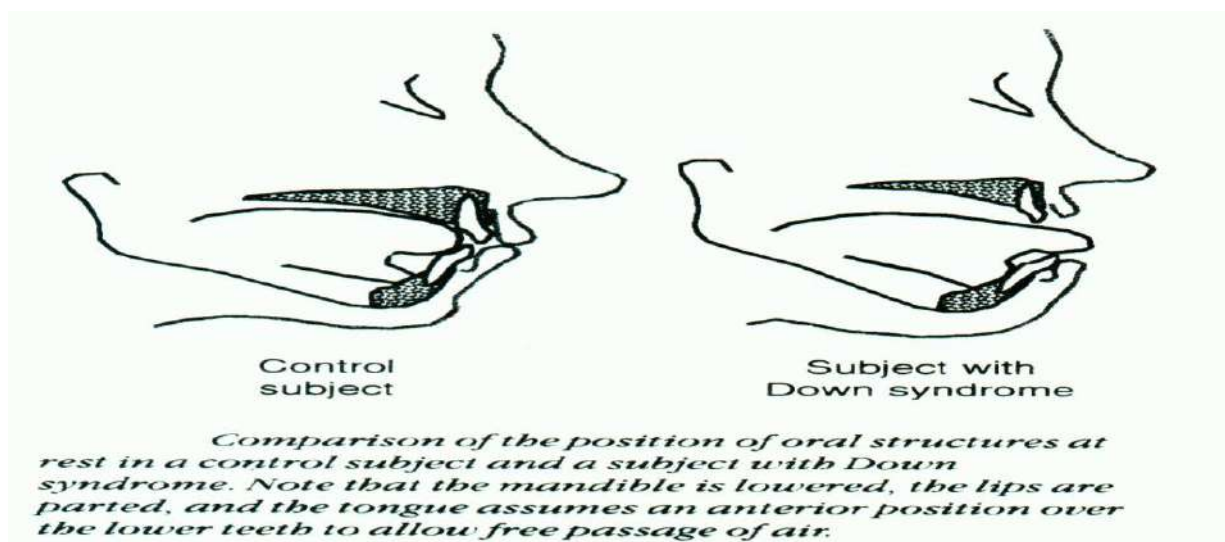


Figure 1.3: Speech, (Image source: [intellectualdisability.info](http://intellectualdisability.info))

### 1.8 Conclusion

This chapter has examined the intersection of phonetics, neurolinguistics, psycholinguistics, Down syndrome, and language acquisition, synthesizing key findings from each discipline. Neurolinguistic studies provide insights into the brain structures and functions that contribute to language difficulties in Down syndrome. From a psycholinguistic point of view, cognitive aspects like working memory and processing speed also play an important role in language acquisition. In addition, research into language acquisition underscores the benefits of early intervention and multimodal communication. Despite the significant progress made in these fields, gaps remain in fully understanding how these factors interact over time. This should be achieved in an interdisciplinary way by bringing together phonetic analysis, neurolinguistic imaging, and psycholinguistic modeling in the formulation of holistic language acquisition frameworks. Thus, finally allow future investigations to generate improved understandings of the language acquisition challenges along with more valid and effective educational and therapeutic practices. The next chapter will lay the groundwork for the research methodology and data collection procedures.

# **Chapter Two**

## **Methodology & Data**

### **Collection Procedure**

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### 2.1 Introduction

This chapter discusses about the research methodology and data collection procedures of the difficulties faced by pupils with Down Syndrome in developing English speaking skills at primary level. Thus, the chapter covers several critical areas. First, it discusses the purpose and necessity of this research by the researcher and delves into discussion and explanation of research design and techniques utilized. It provides information on the research environment and population sample, then explain the data collection tools utilized in gathering data and methods used in obtaining data, and analysis techniques used in investigating the different collected data. Finally, the chapter deals with the measures employed to determine the validity and reliability of research findings.

### 2.2 Research Objectives

The objective of this research is to investigate the English speaking skills difficulties faced by primary school Down syndrome pupils in Algeria, evaluate the effectiveness of existing teaching methodologies and materials for their learning needs and to find practical strategies to enhance their language acquisition. Down syndrome pupils now days experience difficulties on their speaking skills such as speech production, auditory processing, and memory retention which can make it hard to develop fluent communication skills.

Additionally, the study will examine, identify and recommend evidence-based interventions, such as multisensory learning techniques, technology, and individualized instruction. To support and enhance the English-speaking skills with pupils with Down syndrome. By considering these objectives, the research seeks to enrich the inclusivity and effectiveness of language education approaches for pupils with Down syndrome.

### 2.3 Research Design

## **Chapter Two: Methodology & Data Collection Procedures**

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In each research effort, the research design is fundamental. It forms the foundation for the research project's strategic organization. It is the method the researcher has carefully developed to logically combine various research components and rationally. To minimize the risk of bias

and improve the validity and reliability of the data collected and evaluated, the design outlines procedures for choosing study participants, sites, and data collection methods. Therefore, an efficient study design is crucial because it directs the researcher to make decisions that improve the caliber, reliability, and repeatability of the results.

This study uses a descriptive research method to look into the challenges that primary school pupils with Down syndrome have when trying to improve their English-speaking abilities. It seeks to explain and offer a thorough grasp of the current difficulties, as well as the viewpoints of teachers, with relation to learn to speak English. The goal is to Identify the exact challenges these pupils have when learning to speak English, taking into account both social and cognitive aspects. In order to provide answers regarding the present state or features of the topic or phenomenon under investigation, descriptive research entails the methodical gathering, examination, and interpretation of data.

### **2.4 Research Methods**

This research applies a mixed-methods approach combining both qualitative and quantitative methods to examine the challenges faced by pupils with down syndrome in primary schools. A mixed-methods design help for a comprehensive examination with the difficulties these pupils face, using diverse data collection tools and techniques to strengthen the validity and reliability of this research. By integrating both qualitative and quantitative research methods, this approach helps gaining richer and more nuanced understanding of the academic, social and emotional barriers faced by pupils with Down syndrome. Furthermore, it

provides insights into the perceptions and experiences of the teachers, Caregivers and peers, offering insights into the different viewpoints related to inclusion and assistance in the classroom. This approach offers an opportunity to view the phenomenon into the eyes of participants, providing a clearer and more comprehensive understanding of the challenges faced by pupils with Down syndrome in the primary education.

### 2.5 Case Study

During the academic year 2024–2025, a descriptive case study will be carried out at a chosen primary school in Algeria to examine the challenges faced by pupils with Down syndrome in refining their English-speaking abilities at the basic level. Stake (1995) defines a case study "A research strategy that involves the detailed examination of a single instance or event, focusing on its context and the interactions within it" (p. 64). To obtain a thorough grasp of particular occurrences in their actual setting, this study method is frequently employed.

According to this study, the difficulties that pupils with Down syndrome encounter when learning to speak English are still a topic that has not received enough attention in Algerian primary education. The purpose of this case study is to shed light on the unique challenges these students face when learning English while taking into account their social, linguistic, and cognitive development. It will also look at how parents, teachers, and support personnel may help pupils overcome these obstacles and improve their language skills.

Through this case study, the researcher will be able to gather the perspectives of important parties, such as educators, and provide a thorough summary of the difficulties and experiences faced by pupils with Down syndrome. Second, the case study's conclusions will help create practical plans, instructional strategies, and educational regulations to improve primary-level English language learning for pupils with Down syndrome.

### 2.6 Sample Population

Any research study must have a sample, which is chosen before any data is gathered. The sub-unit selected to represent the entire population is known as the sample population. According to Richards (2001), "Sampling involves asking a partial of the potential population instead of the total population and seeks to create a sample that is representative "(p.58) Thus, selecting an appropriate sample is essential. Stated differently, appropriate sample population selection is necessary to guarantee the validity and generalizability of the study's conclusions. Another crucial factor to take into account is the sample population's size, since larger samples typically yield more accurate and trustworthy results than smaller ones.

In this research, the sample population was Down syndrome pupils from primary schools and their teachers because both the students and the teachers face challenges in the process of learning English speaking skills. The sample used for the study was chosen systematically based on a predetermined set of criteria. First, the study aims to investigate the issues faced by pupils with Down syndrome in acquiring the ability to speak English, with special focus on those who are at the elementary level where initial language capacity is typically developed. Second, the study targets pupils with Down syndrome since their unique learning needs and developmental challenges make their experience different from that of other students.

Second, the sample itself consists of solely Algerian parents, educators, and students and does not comprise any foreign students, thus the setting is made specific to the local education context. Lastly, the researcher's relationship with the selected primary school helped in identifying the sample because it provided higher accessibility to the target population and

made the process of data collection easier. This collaboration also enabled more complete understanding of the national educational context, so that the results would have immediate relevance to the challenges faced by Down syndrome pupils in Algeria.

### **2.7 Data Collection Instruments**

The process of obtaining the information required regarding the phenomenon being studied is known as data collection or data gathering, and it is an essential stage in every research project. It entails choosing and using the right tools, as the dependability and quality can have a direct effect on the reliability and validity of the results. As a result, this stage has to be properly organized. Numerous aspects, including the study's nature, the research topic and objectives, the research design, and the target population, influence the choice of data collection tools.

To investigate the difficulties faced by pupils with Down syndrome in developing English speaking skills at the primary level and to understand the perspectives of both teachers and parents regarding these challenges, two data collection instruments were used to gather data from different angles: an online questionnaire and semi-structured interviews. Each of these instruments serves a distinct purpose and has its own set of strengths and weaknesses.

The online questionnaire was designed to collect quantitative data from teachers regarding the specific challenges faced by pupils with Down syndrome when learning English and the strategies used by them to enhance language development. This instrument allows for data to be collected from a wider sample, providing a broader insight into the issue. Conversely, the goal of the semi-structured interviews was to acquire more detailed, qualitative information about the individual experiences and viewpoints of educators. These interviews provide the chance to delve deeper into the complex and unique difficulties that each participant faces.

When combined, these two tools offer a thorough understanding of the challenges faced by pupils with Down syndrome as they work to improve their English-speaking abilities.

### **2.7.1 Online Questionnaire**

The questionnaire is a popular data collection tool among researchers. In order to collect information from responders, it consists of a number of questions and additional prompts. In general, it is regarded as a quantitative data collection method approach, and it is a useful tool for effectively gathering data from a big sample.

In the current study, an online questionnaire was distributed to 80 primary school teachers who work with children who have Down syndrome as part of the current study. Fifty-five (58) teachers responded to the questionnaire, accounting for 72.5% of the total number of participants. It is important to note that, according to a special education program coordinator questioned in this report, out of the 80 teachers in this field, about 58 actively teach and assist pupils with Down syndrome in developing their English-speaking abilities.

The purpose of the questionnaire is to collect information about the attitudes and opinions of the teachers regarding the difficulties that pupils with Down syndrome encounter when developing their English-speaking abilities at the primary school level. To ensure that it aligns with the research topic and avoids any misunderstandings, the teachers were asked to complete the questionnaire in English. The questionnaire was conducted only in English to conform to the study's objectives and the participants' proficiency in teaching English. By conducting the questionnaire online through emails and social media sites like Facebook and Messenger, the researcher was able to efficiently reach a broad population, save time, and allow respondents to respond whenever it was most convenient for them. Respondents were also able to consider the questions more carefully and provide more accurate responses because to this

## **Chapter Two: Methodology & Data Collection Procedures**

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process. Respondents have adequate time to complete the online survey because it was accessible to them for two and a half (2.5) months.

The questionnaire was prepared in an organized way with a logical flow of questions, beginning from general to more particular questions relevant to the challenges faced by Down syndrome pupils in learning English speaking abilities. To provide the teachers the freedom to elaborate on their experiences and opinions on the subject, most of the questions were open. Additionally, there were two closed-ended questions to make it easier for the researcher to collect data.

There were nine (9) questions on the survey. There was an introduction outlining the goal of the research and the significance of the respondents' involvement. A brief explanation of the important terms, including "Down syndrome" and "English speaking skills," was also provided to orient the respondents to the concepts being discussed before answering the questions.

The first four questions (Q1, Q2, Q3, Q4) are open questions with predetermined responses, which were personal questions about gender, school name and their years of experience in teaching pupils with Down syndrome and their familiarity in speaking development with Down syndrome pupils. The aim is to gather background information about the teachers. The next two questions (Q5, Q6) are open questions as well inquire about the teachers experience with the challenges Down syndrome pupils face and the strategies, they have used to support their speaking skills. Question six (Q6) relates to whether the Algerian program's phonics materials and teaching methods are effective for Down syndrome pupils or not. (Q7) is about teacher's recommendations for any modification or additional resources they would like to add within the Algerian educational program to enhance the speaking skills of Down syndrome pupils. (Q8) a closed-ended question addressing if the teaching training

programs adequately prepare educators to address the needs of pupils with Down syndrome. In the last question (Q9) an open-ended question to elicit suggestions for strategies and training program to be added in the Algerian educational program. The data collected through this questionnaire will be analyzed to determine if the teacher's viewpoints and attitudes support the hypotheses formulated for the research study.

### 2.7.2 Interview

An interview is a popular qualitative research technique that usually refers to a conversation between two people who are gathering data on a particular event or topic: the interviewer and the interviewee. Interviews are very important. By providing rich qualitative data, researchers are able to thoroughly investigate complex subjects. Since it enables the researcher to communicate directly with participants and use open-ended questions to elicit in-depth answers, it is seen as a useful tool.

Interviews with educators were included in order to provide a more nuanced understanding of the issue by gathering insights, experiences, and perspectives from professionals who work closely with these pupils. The difficulties faced by pupils with Down syndrome in developing English speaking skills at the primary level are complex and multifaceted, and while initial observations suggested challenges in various aspects of language acquisition, the data collected through assessments alone proved insufficient to fully understand the underlying factors. A deeper exploration of the specific challenges faced by pupils with Down syndrome in developing English speaking skills, as well as the strategies and interventions that can support their language development, was made possible by the inclusion of interviews.

Eight (08) of the twelve (12) instructors who instruct primary-level pupils with Down syndrome at Ain Temouchent primary schools participated in a semi-structured interview for

## **Chapter Two: Methodology & Data Collection Procedures**

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this study. The target population is made up of 67% of these participants. Both structured and unstructured interviewing techniques are used in this semi-structured interview. Although it follows to a preset list of questions, it permits customization depending on how the discussion unfolds and how the participants react. Because it guaranteed clarity and gave the interviewees a comfortable setting, the interviews were done in English. After getting permission from the respondents, the majority of the interviews were audio recorded in order to save time and guarantee proper data collection. To have an in-depth understanding of the challenges faced by pupils with Down syndrome in developing their English-speaking abilities, the replies were transcribed and examined. All of the interviews were done in person at the Ain Temouchent primary schools and lasted between thirty minutes to two hours.

The interview consists of 10 open-ended questions, where the teachers can provide more detailed responses, thereby gathering richer qualitative data. The first three questions (Q1, Q2 and Q3) were personal questions about their teaching experience and background information. Subsequently, the next question (Q4) is about general challenges that pupils with Down syndrome face in developing English speaking skills. Moreover, (Q5 and Q6) about cognitive and developmental factors, specific issues pupils with down syndrome face such as sounds, words and what impact their ability on learning spoken English. Additionally, (Q7 and Q8) looked forward to gather data about teaching strategies that teachers use to help pupils with Down syndrome improve their spoken English. (Q9) is intended to identify environmental and contextual factors to see how the classroom environment influence pupils with Down syndrome English speaking skills. Finally, the last question (Q10) was open-ended, the interviewees were requested to provide suggestions to ameliorate speaking skills with Down syndrome.

### **2.8 Data Collection Procedures**

## **Chapter Two: Methodology & Data Collection Procedures**

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The data collection process starts with the first step where the researcher developed an observation grid during the first semester of the 2024/2025 academic year. This helped the researcher gain an initial understanding of Pupils with Down syndrome while learning speaking English.

The second step involved administering the teachers' questionnaire before the actual data collection. This aimed to assess the clarity and suitability of the questionnaire and to gather initial insights about the difficulties faced by pupils with Down syndrome at the primary level in Algeria from the teachers' perspectives.

Following the initial observations and questionnaire, the researcher administered the final questionnaire to all participants, which took two months and a half to gather the responses from teachers. Additionally, the researcher conducted the remaining observations over one month and a half, simultaneously with teacher interviews during the second semester. The interviews allowed the researcher to directly capture the perspectives and challenges faced by pupils with Down syndrome, in total, eight (08) interviews were conducted over a two-week period.

### **2.9 Data Analysis Methods**

After the data collection phase, the data analysis phase follows. It involves examining, filtering, and analyzing the collected data. The data can be analyzed using either quantitative or qualitative methods, or a combination of both, depending on the nature of the collected data. Each analytical method encompasses distinct interpretive techniques that facilitate the comprehension of research findings. Data analysis forms the core and backbone of research, that enables researchers to derive meaningful conclusions from the phenomenon being investigated. Therefore, researchers must pay close attention to the data analysis phase to effectively address their research questions and objectives.

## **Chapter Two: Methodology & Data Collection Procedures**

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In investigating the difficulties faced by Down syndrome pupils in learning speaking skills in English at the primary level, a mixed methods design was employed to examine data collected from various research instruments. The rationale for employing this method is the type of data that had to be qualitatively and quantitatively analyzed in order to have a better insight into how these pupils are challenged. The mixed methods approach was deemed optimal to utilize when gathering and assessing the data as it would have a better chance of presenting a more precise and complete view of the issues.

To begin with, data from a semi structured questionnaire was quantitatively examined for closed items so as to understand numerically the frequency and level of the difficulties. For open items, qualitative analysis was undertaken so as to allow respondents (language experts, teachers, and caregivers) to give their opinions on specific challenges pupils face when developing English speaking.

Second, qualitative analysis of interview data was used to enable in-depth examination of individual experiences, observations, and professional knowledge. This enabled teachers and Down syndrome experts to identify the minute issues that could not have been elicited using the questionnaire.

This blend of quantitative and qualitative methods provided a comprehensive approach to learning about the challenges of pupils with Down syndrome in acquiring English speaking skills, resulting in more robust and insightful findings for addressing their learning requirements.

### **2.9.1 Quantitative Analysis**

The quantitative data analysis method is considered an objective strategy that involves the systematic evaluation of numerical data, including closed-ended questions, and multiple-choice responses, utilizing statistical techniques.

## **Chapter Two: Methodology & Data Collection Procedures**

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The current study used quantitative analysis approaches to look into the obstacles that pupils with Down Syndrome have when developing English speaking skills at the primary level. Data were acquired using a closed-ended questionnaire provided to teachers of Down Syndrome pupils. The responses were recorded and organized in a digital format to facilitate analysis. The numerical data from the questionnaire items were transformed into percentages. Graphs, and tables were used to show the results, for easy comparison. This technique aims to provide the data in a comprehensible manner, emphasizing the specific language-related issues encountered by the pupils While offering a deeper understanding in the collected replies.

### **2.9.2 Qualitative Analysis**

Unlike quantitative methods, qualitative data analysis collects non-numerical data from numerous sources using instruments like interviews and observations. Subjective research involves examining individuals' experiences, views, and attitudes to get a comprehensive picture of the issue under study. Qualitative data analysis involves inductive methodologies including topic analysis, content analysis, and discourse analysis.

This study used a qualitative data analysis method to analyze and interpret information from teacher interviews. The interview data consisted of audio recordings transcribed and given as text. quotations, including indirect quotations. This section concludes with a summary of the study's research design:

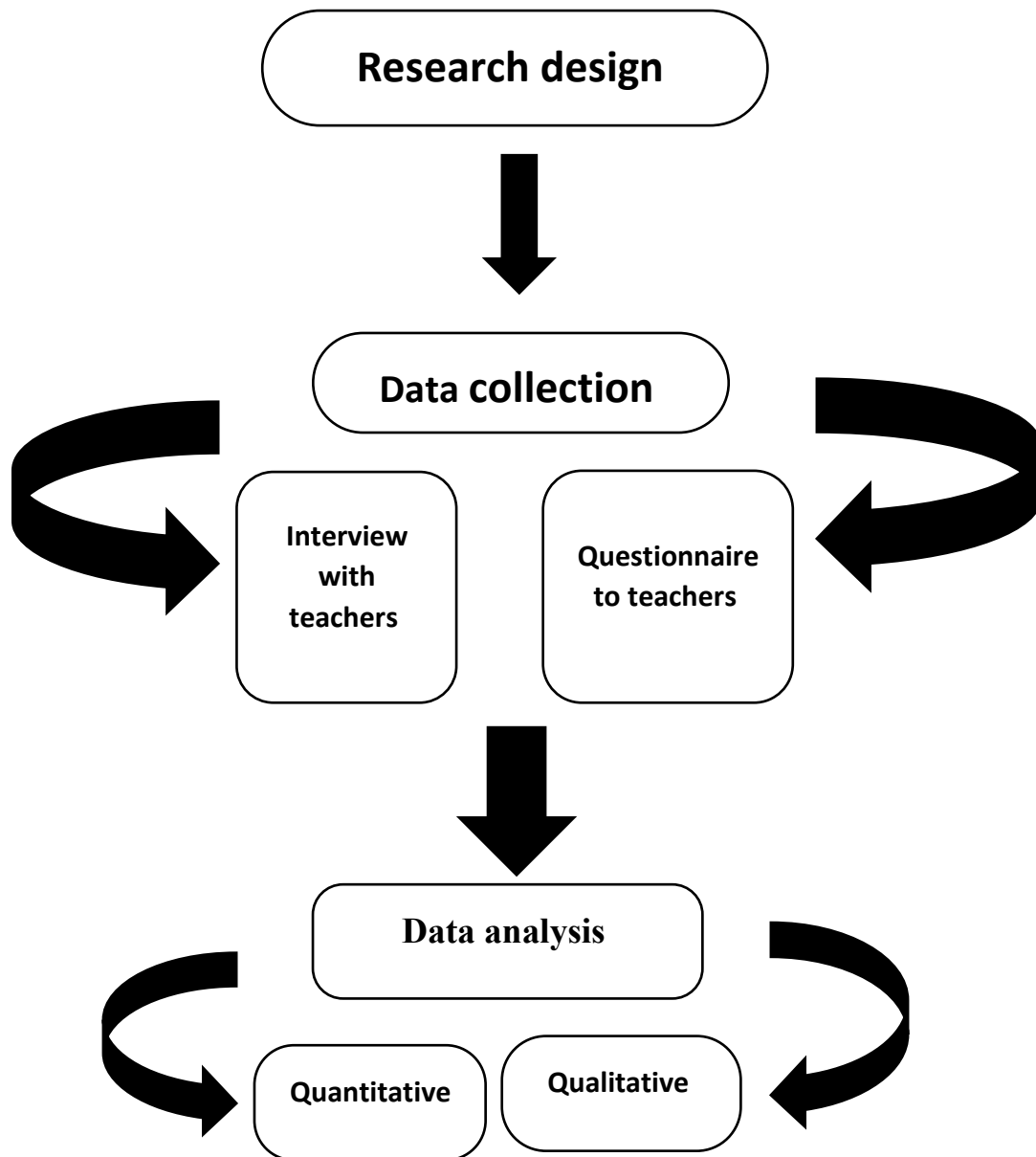


Figure 2.1: Research Design

## 2.10 Validity and Reliability

Validity and reliability are crucial for determining the quality, correctness, and trustworthiness of research findings. These methods improve transparency and eliminate researcher bias, leading to better results. The academic community can trust and employ high-quality research. Validity ensures that a research instrument accurately assesses its intended

## **Chapter Two: Methodology & Data Collection Procedures**

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outcome, establishing the credibility and correctness of the study's findings. In contrast, reliability refers to the consistency and durability of research findings. The tool provides reliable results over time and in different scenarios.

To ensure validity and reliability in the present research study methodological triangulation as well as instrument triangulation were employed. Methodological triangulation entailed the use of both qualitative and quantitative research methods Instrument triangulation involved using different research instruments: an online questionnaire administered to English primary school teachers and interviews with teachers. Triangulation is a valuable approach that involves employing different instruments, research sites, and data sources to study a phenomenon, thereby enhancing the validity and trustworthiness of the research findings.

In addition, to promote reliability, the questionnaire items were formulated clearly and unambiguously, and it was distributed online, allowing participants to access it at their convenience in a comfortable and quiet environment. This encouraged honest responses and accommodated participants', making it more practical compared to the paper-based method. These strategies aimed to ensure the validity and reliability of the study's outcomes, which investigated the academic language policy.

### **2.11 Conclusion**

This chapter outlines the research methodology used to explore the difficulties faced by pupils with Down Syndrome in developing English speaking skills at the primary level. A mixed-methods approach, combining both quantitative and qualitative techniques, was chosen to provide a comprehensive understanding of the challenges these pupils encounter. Data was collected through surveys for teachers and interviews with teachers to ensure the validity and reliability of the findings. The next chapter will analyze and discuss the results, offering

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recommendations to improve support and teaching strategies for better language development in these pupils.

**Chapter Three**

**Data Analysis,**

**Suggestions &**

**Recommendations**

**Chapter Three: Data Analysis, Suggestions & Recommendations**

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### 3.1 Introduction

This chapter provides a detailed overview of the difficulties that pupils with Down Syndrome face when developing English speaking abilities at the elementary school level. The analysis is based on data gathered using two primary instruments: an online questionnaire and interviews, which employ both quantitative and qualitative research approaches. The goal of this study is to investigate the specific issues these pupils face while learning English, focusing on factors such as communication obstacles social interaction, and classroom dynamics. The chapter examines the findings of an online questionnaire answered by 58 primary school teachers and caregivers, as well as insights gained from interviews with eight Teachers. In addition, it highlights important themes relating to the methods used to help these pupils improve their speaking skills. This chapter is followed with a list of suggestions for improving teaching practices for pupils with Down Syndrome while building their English-speaking skills. Finally, this study's are addressed, offering context for the findings and recommendations for future research.

### 3.2 Data analysis

#### 3.2.1 Analysis of Teachers' Questionnaire

##### Question 1: Gender

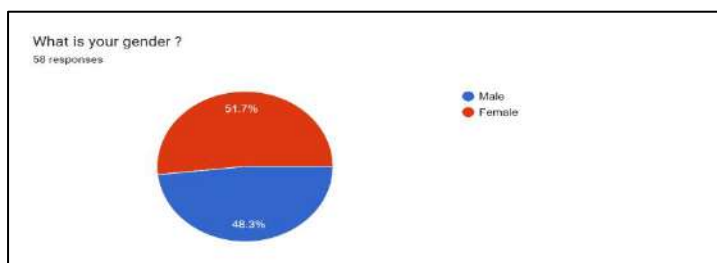


Figure 3.1 : teachers'gender distribution

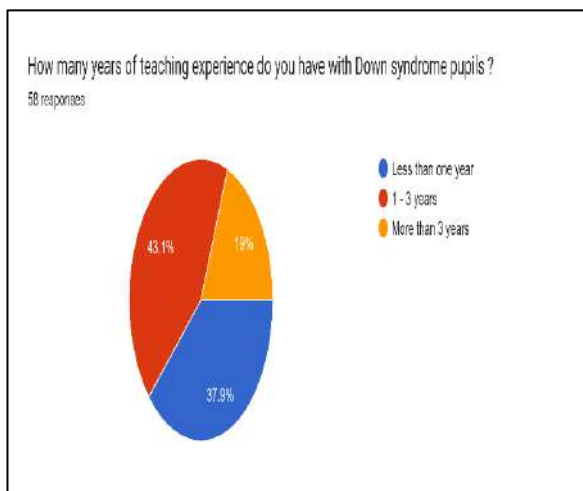
Options	Frequency	Rate
Male	28	48.3%
Female	30	51.7%
<b>Total</b>	58	100%

Table 3.1 : teachers'gender distribution

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The findings of the closed-ended demographic question show that 28 respondents (48.3%) identified as male and 30 respondents (51.7%) identified as female. This indicates a nearly equal gender distribution, with a slight majority of female respondents. The difference between the two groups is small, resulting in a practically gender-balanced sample. These findings give important context for examining possible differences between genders in replies to the other items in the questionnaire.

### Questions 2 and 3: School Names and Teaching Experience



**Figure 3.2: Teachers’ Teaching Experience**

options	Frequency	Rate
Less than one year	22	37.9%
1 – 3 years	25	43.1%
More than 3 years	11	19%
<b>Total</b>	58	100%

**Table 3.2: Teachers’ Teaching Experience**

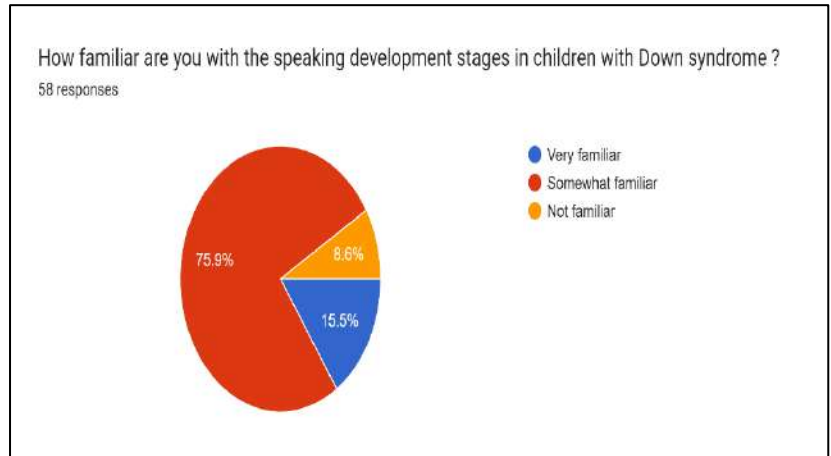
The results of the two questions provide vital insights on teaching experience with Down syndrome pupils and the role of primary schools in Ain Temouchent. The list of school names, including Aicha Oum El Mouminine, Bouchareb Boualem, Tarik Boukawane, and Talha Ahmed, suggests a geographic focus on primary schools in this region, which may be related to survey or research participants. These schools may affect the environment of inclusive education or support for pupils with Down syndrome. In terms of teaching experience

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with Down syndrome pupils, the results show that 37.9% of teachers have less than one year of experience, 43.1% have one to three years experience, and 19% of teachers have more than three years. This information indicates that the majority of teachers in primary education are still in the first stages of their careers, with many teachers having minimal experience working with Down syndrome pupils. Few participants with more than three years of experience emphasize the importance of lifelong learning and support for educators working with pupils with Down syndrome. This shows that there may be a problem in specialized training for teachers, and emphasizes the need of guidance and teamwork in helping teachers improve their skills for teaching Down syndrome pupils.

### Question 4: How familiar are you with the speaking development stages in children with Down syndrome?

Options	Frequency	Rate
Very familiar	9	15.5%
Somewhat familiar	44	75.9%
Not familiar	5	8.6%
<b>Total</b>	<b>58</b>	<b>100%</b>



**Table 3.3: teachers' familiarity with Down syndrome**

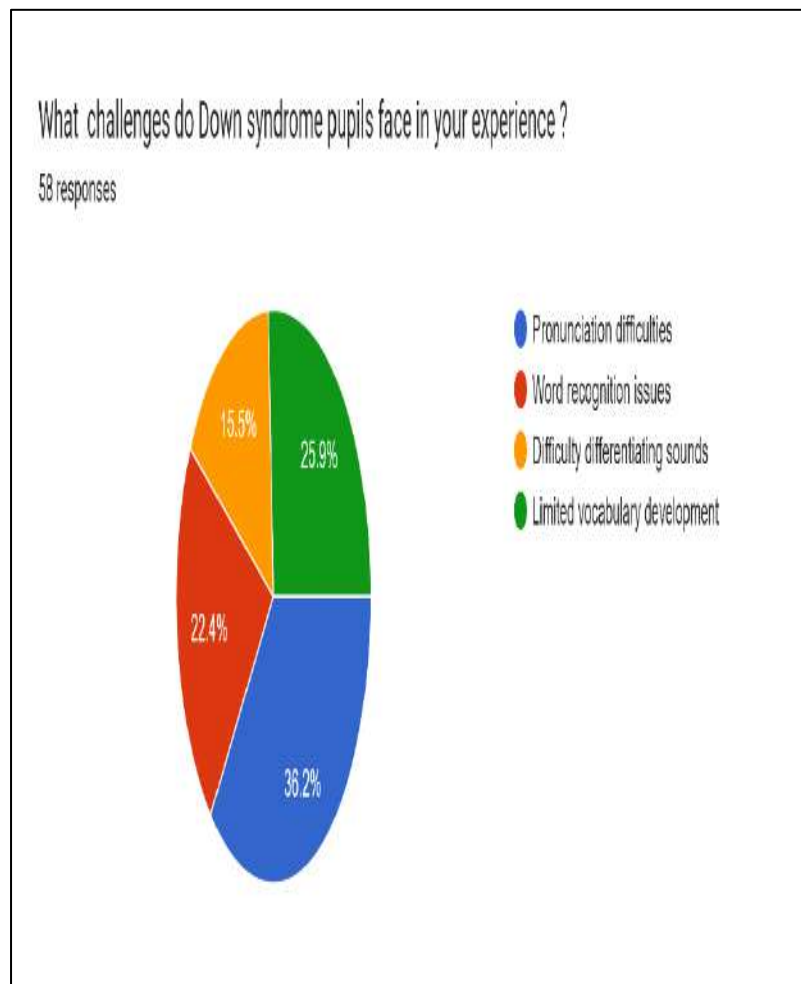
**Figure 3.3: teachers' familiarity with Down Syndrome**

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The results show a variety of familiarity levels among teachers. The majority, 75.9%, claimed being somewhat familiar with the subject, while most people are aware of the topic, they may lack information regarding the exact stages of speech development in pupils with Down syndrome. 15.5% of respondents said that they are so familiar with the speaking development stages, selecting that few minorities showed deeper understanding, most likely due to professional experience or specialized knowledge. However, 8.6% of respondents claimed to be not unfamiliar with the topic, indicating that some people still lack awareness.

### Question 5: What challenges do Down syndrome pupils face in your experience?

Options	Frequency	Rate
Pronunciation difficulties	21	36.2%
Word recognition issues	13	22.4%
Difficulty differentiating sounds	9	15.5%
Limited vocabulary development	15	25.9%
Total	58	100%



**Table 3.4: Down syndrome pupils challenges**      **Figure 3.4: Down syndrome pupils**

### Challenges

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The results of the question "What challenges do Down syndrome pupils face in your experience?" reveal many significant areas where pupils with Down syndrome frequently suffer from language improvement. The most frequently mentioned difficulty is pronunciation, which 36.2% of respondents consider to be a significant concern. This shows that many pupils with Down syndrome have difficulty expressing words correctly, which can impede successful communication. Another significant difficulty is limited vocabulary development, which was cited by 25.9% of respondents. This suggests pupils may have slower or more restricted vocabulary growth than their peers. Word recognition challenges were noted by 22.4% of participants, indicating that some pupils struggle to recognize and understand words, which can impact both reading and spoken communication. Finally, 15.5% of respondents had trouble distinguishing between similar sounds, which is important for both language comprehension and speech output. Overall, the data show that pupils with Down syndrome face various language development obstacles, with pronunciation and vocabulary development being the most pressing issues.

### **Question 6: What specific strategies have you used to support speaking skills in Down syndrome pupils?**

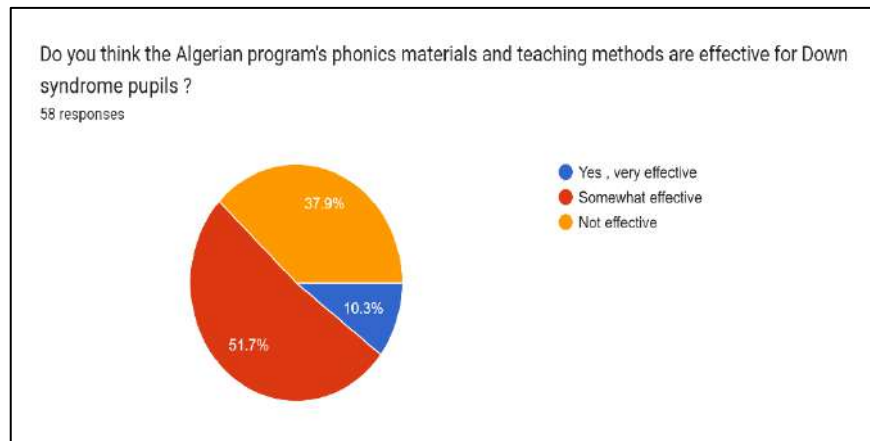
The feedbacks to the question show a vast range of approaches to developing speech and abilities. Common answers are the stress on repetition, with many teachers emphasizing the need of practicing words, and sounds to improve pronunciation. Visual aids such as drawings, gesture-based communication, and reduced language are regularly used to reinforce language concepts, particularly for pupils who benefit from visual learning. Many respondents also highlight the relevance of modelling and turn-taking in communication, where adults or peers exhibit good speech and encourage Down syndrome pupils to engage in social interactions, thereby improving speech development in an essential setting. Also, parental engagement is emphasized, for maintaining consistency through daily routines and

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strengthening language skills at home. Patience, understanding, and a supportive environment are pointed out as critical components for supporting speech development in pupils with Down syndrome, making sure that they feel encouraged as they improve their speaking abilities.

**Question 7: Do you think the Algerian program's phonics materials and teaching methods are effective for Down syndrome pupils?**

Options	Frequency	Rate
Yes, very effective	6	10.3%
Somewhat effective	30	51.7%
Not effective	22	37.9%
Total	58	100%



**Table 3.5: Effectiveness of the Algerian**

**Phonics materials and teaching methods**

**Figure 3.5: Effectiveness of the Algerian**

**Phonics materials and**

**Teaching methods**

The responses to this question indicate a mixed opinion of the existing phonics strategy. Most of the teachers, 51.7%, assessed the materials and procedures as somewhat effective, indicating that, while there were some positive effects, we still have the potential to grow and fully meet the requirements of Down syndrome pupils. A large segment (37.9%) believed that the phonics materials and procedures were not effective for these pupils, implying that the existing program may not sufficiently address the obstacles that Down syndrome pupils face

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in language development. On a positive note, 10.3% of respondents said the program is beneficial, revealing that the phonics approach can benefit for some people. These results indicate that, while the Algerian curriculum may have some valuable features, additional improvements are required better to serve the phonological learning demands of Down syndrome pupils.

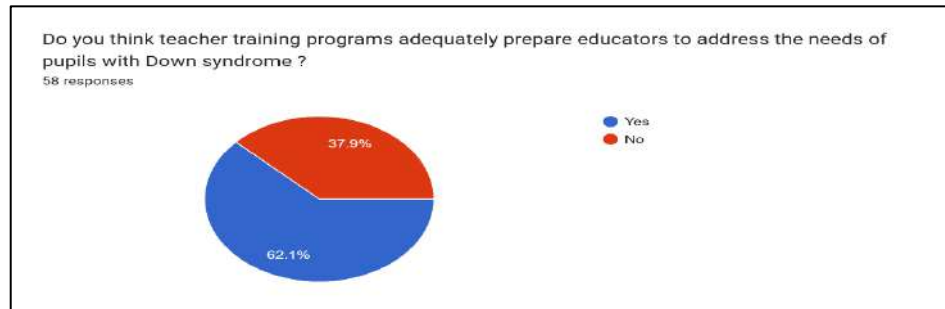
**Question 8: What modifications or additional resources would you recommend to enhance the speaking skills of Down syndrome pupils within the Algerian educational program?**

The results of this question reflect a good number of answers, mainly geared at providing more personalized and specialized help to these pupils. A reoccurring request is for teacher training, with many respondents recommending that educators obtain specialized training on the unique needs of Down syndrome pupils, as well as successful ways to enhancing their speaking skills. There is widespread support for working with speech therapy programs that can focus on specific linguistic challenges, including vocabulary and articulation. A further option is to incorporate technology, such as speech-generating devices, and speech-therapy applications, to improve communication, particularly for pupils with severe speech disorder. Many responders also focus on using visual aids like image cards, flashcards, and films, which can help with language comprehension by giving specific visual references. Multisensory strategies, such as the use of songs, gestures, and different activities, were also identified as helpful strategies for engaging Down syndrome pupils. Many responders point on the importance of social connection through peer interaction and group work, which improves communication skills and reduces fear and builds confidence in Down syndrome pupils. These data show that improving the speaking abilities of Down syndrome pupils requires a multi-faceted approach such as exceptional support, technology, teacher and parent training, and an inclusive learning environment.

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**Question 9: Do you think teacher training programs adequately prepare educators to address the needs of pupils with Down syndrome?**

Options	Frequency	Rate
Yes	36	62.1%
No	22	37.9%
Total	58	100%



**Table 3.6: Teachers’ opinion about teacher training programs**

**Figure 3.6: Teachers’ opinion about teacher training program**

The results show a positive attitude on the effectiveness of teacher training programs, with 62.1% saying that they effectively prepare educators for teaching special needs pupils. This implies that the majority of Down syndrome pupils are confident in the existing training provided about handling the special needs of these pupils. On the other hand, a high number (37.9%) believe that teacher preparation programs do not effectively educate educators for these issues. This suggests there is still a need for improvement in teacher preparation, exposing potential training shortages, notably in specialized methods and strategies for assisting pupils with Down syndrome. While the majority of respondents believe the training is acceptable, a significant minority disagree, implying that further improvement of these programs may be required to ensure that instructors are adequately trained and resourced to meet the needs of these pupils.

### 3.2.2 Analysis of The Interviews

**Questions 01 and 02: Background information**

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The goal of these two questions is to collect background information about the interviewees. The responses to the questions on years of experience and familiarity with pupils with Down syndrome show that the teachers are new to teaching, the majority having 1 to 3 years of teaching experience. This indicates that they are still in the early phases of their professions, learning and modifying their teaching methods. One teacher, for example, said, "This is my second year of teaching, and I am still exploring different ways to manage diverse needs in the classroom." another teacher stated that she has been teaching only for about a year and a half, so she was constantly looking for new methods and best practices. The responders' comments demonstrate a feeling of openness and growth-mindedness. While many teachers reported working with a few Down syndrome pupils, their direct experience is limited. One teacher said, "I had one pupil with Down syndrome in my class last year. It was a learning experience, and I tried to adapt my training to what worked for them.". Another individual stated, "I have not had extensive experience, but I have worked with support staff to help one of my pupils with Down syndrome succeed." Although they have limited experience, the teachers showed are willing to adapt and improve their strategies. One instructor stated that he may not have all the experience yet, but he is always open to learning more about supporting pupils with special needs. This indicates a strong sense of professional responsibility and a desire for growth .Overall, these teachers are still gaining valuable classroom experience, with a focus on

### **Question 3: Have you received any training before working with pupils with Down syndrome?**

The primary purpose of this question is to find out whether teachers have had formal or specialized training in working with pupils with Down syndrome. According to the comments, none of the teachers had received Down syndrome-specific training before working with these youngsters. Instead, their techniques have been influenced by their experience and informal

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education with Down syndrome pupils. A teacher, for example, said he has not received any training specifically for Down syndrome, but he has learned a lot just by working directly with students. Another said that most of what she knows comes from online articles and videos. While others have attended general inclusive education workshops, some believed the sessions were too broad and did not provide practical Down syndrome-specific methods. A colleague said, "I attended a seminar on inclusive teaching strategies, but it did not really touch on Down syndrome in any depth." These responses share a common theme: teachers depend on personal experiences, peer support, and self-directed research to fill the gaps left by a lack of formal training. This shows the need for more professional development that provides teachers with the specialized skills and tactics required to manage pupils with Down syndrome in the classroom effectively.

### **Question 4: General challenges**

The main objective of this question is to specify the problems that pupils with Down syndrome experience when developing English speaking skills. The answers highlight various issues, with pronunciation and articulation. Many teachers stated that pupils struggle to pronounce specific sounds and words. A teacher stated that her student found it hard to pronounce 'th' sounds, making her afraid to speak in class. Memory retention was also discussed, as pupils have the ability to forget new vocabulary or sentence structures, making it difficult to build on earlier teachings. Another teacher said that even after practising a word so many times, her student might not remember it the next day. Furthermore, many pupils struggle to understand complicated phrases, necessitating the need for teachers to break down instructions and provide additional practice. Fear of making mistakes was a common emotional barrier, leading to a reluctance to talk at all. One teacher noticed, "He closes down when he believes he has said something incorrect. It is more than just the words; it is the fear of doing it wrong." Finally, teachers stressed the importance of additional processing time. These

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answers point the value of a calm, encouraging, and repetitious teaching strategy that gives students the space and support they need to improve their English-speaking skills gradually.

### **Question 5: Are there specific sounds, words, or grammar rules that seem particularly challenging for them?**

The goal of this question is to find and which specific sounds, words, or grammar rules present challenges for pupils with Down syndrome. The answers show a difficulty with pronunciation, especially with sounds like /θ/ (as in *th*), /s/, /r/, and /l/ ('th,'s,' r,' and 'l'). A teacher noticed, "My pupils really struggles with 'th' and often replaces it with 'f,' which affects how easily others understand him." Another stated, "The 'r' sound is especially tricky, and sometimes it disappears entirely from the word when they say it." Beyond pronunciation, grammar is a key challenge. Teachers indicated that pupils often struggle with tense usage, particularly with irregular verbs. According to one teacher, "It is hard for them to remember tense forms." The teacher explained that they said things like 'What she is doing?' instead of saying 'What is she doing?' and it takes much repetition to correct. Another frequently mentioned an issue was subject-verb agreement, especially in phrases. This information that was found suggest that pupils with Down syndrome continue and still struggle with phonetic articulation and key grammatical rules, pointing the importance of individualized education, frequent reinforcement, and structured language help in the classroom.

### **Question 6: To what extent do memory or processing issues impact their ability to learn and use spoken English?**

The goal of this study is to discover more about how memory and processing problems affect pupils with Down syndrome when learning and using spoken English. It is evident from the educators' answers that these challenges have a massive effect on these pupil's capacity to remember and use language abilities. Memory challenges are a common subject. According to

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many educators, pupils frequently have trouble recalling vocabulary, which limits their communicate capacity effectively. A teacher stated that even after practising for a week, one of my pupils forgets simple words like 'yesterday' or 'tomorrow'. The same words must be repeated several times before they start to stick in our minds. Another commented, "Grammar is complicated. They may remember how to make a question one day but entirely forget its structure the next." Processing delays were also commonly observed, since students often need more time to process spoken content, resulting in slower responses and occasional misunderstandings in class. A teacher stated, "I see them trying hard to comprehend what I have said, but it is difficult for them to engage in group conversations," while another added, "When we go too fast, they block. They require time to comprehend and reply before they begin to withdraw." These issues can harm pupils' confidence. To address these problems, teachers emphasized the value of repetition to promote retention. as one teacher said that repetition is essential. We cover the same material in a variety of ways—visuals, music, and games—to help Down syndrome pupils to process the language and even to make their pronunciation better." Another agreed that "engaging in practising and repetition is beneficial." If we skip a few days, it is like starting all over again." The findings show that memory and processing problems provide significant issues for pupils with Down syndrome, necessitating an adaptive teaching strategy to help them progress in spoken English.

### **Questions 7 and 8: Teaching strategies and interventions**

The goal of these two questions is to figure out which teaching approaches and activities EFL teachers believe are most effective in helping pupils with Down syndrome improve their speaking skills. Teachers provided numerous helpful suggestions and techniques to assist pupils in learning English. Many stated that they use simple and repetitive language and divide things into small steps to help these pupils understand and recall better. Visual aids such as drawings, flashcards, and hand gestures are frequently utilized to clarify the message. A

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classroom instructor stated, "Flashcards with pictures really help—my pupils remember words better when they can see an image." Teachers also slow down the speed of the class and repeat information frequently to give pupils more time to comprehend. Another teacher stated, "I repeat questions in different ways to help them follow along without feeling lost." Building pupils confidence is also quite important. According to one teacher, "honoring even small successes makes them feel proud and more motivated to try again." Fun activities like songs, role-playing, and games make learning more fun and allow students to practice speaking in a fun way. A teacher commented also, "When we sing or act out a story, they speak more freely because it feels like play." Working in small groups with classmates was also suggested as a technique to establish a welcoming and relaxed environment for speaking practice. In the second question, teachers examined which tools and activities perform best. Flashcards were popular because they helped pupils connect words and pictures. Many teachers rely on apps and interactive whiteboards to help Down syndrome pupils improve their speaking skills. Someone else commented, "Apps let them hear and repeat words at their own speed, which really helps." Role-playing and picture-based storytelling have been cited as effective methods for getting students to talk in an enjoyable and natural way. Repeating sentences and singing songs were employed to improve pronunciation and sentence structure. Some teachers also mentioned that online speech therapy tools are excellent for additional practice outside of the classroom. One teacher mentioned, "Some of my pupils use speech apps at home, and I can see they're getting better at speaking." Teachers believe that using simple language, lots of repetition, visual aids, and fun speaking activities in a supportive environment works best for helping pupils with Down syndrome learn to speak English.

**Question 9: How does the classroom environment influence their ability to learn English speaking skills?**

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The study found that the classroom environment had an important effect while learning English speaking skills in pupils with Down syndrome. A peaceful, and consistent environment has been shown to be critical for keeping focus and allowing cognitive processing, suggesting that unexpected conditions may represent barriers to effective learning. Teachers highlights the importance of creating an open and inclusive environment in which mistakes are viewed as part of the learning experience. This suggests that emotional safety is critical. The positive reinforcement suggests that consistency encourages pupils to engage in new language experiences. This suggests that emotional safety is critical. The positive reinforcement suggests that consistency not only reduces fear but also encourages pupils to engage in new language experiences. In addition, the use of visual aids such as boards and charts generally enhance comprehension and retention, especially among pupils who respond strongly to visual stimuli. Small group settings are recognized for providing specific support. Overall, the findings suggest that emotional and environmental stability are just as important as instructional strategies in supporting language development in pupils with Down syndrome.

### **Question 10: Which suggestions and recommendations you can offer to ameliorate speaking skills with Down syndrome?**

The goal of this question is to gather comments and recommendations for enhancing the speaking abilities of pupils with Down syndrome. The responses show a variety of strategies targeted at meeting the special requirements of these pupils. Many teachers emphasize the value of visual aids and gestures, which are viewed as excellent tools for reinforcing meaning and facilitating self-expression. Another significant proposal is to slow down the speed of instruction, giving pupils more time to process and answer to questions, thereby lowering pressure and increasing participation. Repetition is recognized as a critical approach for increasing memory retention and recall, with teachers emphasizing the importance of frequent practice in cementing language skills. Teachers also recommend that

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pupils participate in interesting activities such as games, role-playing, and music to make studying enjoyable and less stressful. Another typical tip for ensuring understanding is to simplify instructions by using clear, basic language and breaking them down into smaller parts. Peer support is also addressed, with teachers stating that matching pupils with helpful peers builds confidence and creates a more relaxed learning atmosphere. Furthermore, establishing a consistent, planned classroom routine makes pupils feel safer and more attentive. Finally, technology, such as speech practice applications, is viewed as a useful tool for giving additional help and practice outside of the classroom. Overall, the suggestions point to a multifaceted approach that combines structure, engagement, repetition, and peer collaboration to effectively support the speaking skills of pupils with Down syndrome.

### **3.3 Summary of The Main Results**

The analysis from the two research instruments—the questionnaire and interviews—using quantitative and qualitative methods—unveiled insightful results. The analysis of data obtained from the questionnaire administered to 58 primary school English teachers revealed that, while there is a balanced set of teachers working with pupils with Down syndrome, many of them have little experience, with the majority having less than three years of teaching experience. This shows the need for more specialized training. Furthermore, while most educators have a basic understanding of speech development in pupils with Down syndrome, limited detailed knowledge is currently available regarding the specific challenges these pupils face, such as pronunciation issues, limited vocabulary, and word recognition difficulties. Common pronunciation difficulties include sounds that require precise tongue and lip coordination, such as /s/, /z/, /r/, /l/, and /th/ (as in think and this), which are often challenging due to oral motor limitations. The existing phonics curriculum in Algeria is seen as moderately effective, but it needs to be improved to better fit the specific needs of these pupils. These

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findings prove Hypothesis 1, which stated that pupils with Down syndrome face challenges in developing English speaking skills due to cognitive impairments affecting memory, auditory processing, and articulation.

The main point from the interviews is that the teachers, although being new to the field and lacking formal training in working with pupils with Down syndrome, are strongly motivated to enhance their teaching approaches based on their practical experiences. Although they did not have much knowledge, they are interested in looking for ways to help these pupils face these challenges and difficulties. To minimize these obstacles, teachers use methods including breaking down tasks into smaller pieces, adding visual aids, and using repetition to encourage learning and make it easier for them to use spoken English. They also emphasize the significance of fostering a peaceful, disciplined, and supportive classroom environment in which pupils can feel secure and comfortable. Their method also includes peer cooperation and engaging activities such as role-playing and music, which allow students to practice speaking in a more relaxed and fun atmosphere. These strategies reflect a growing awareness of the importance of multisensory and phoneme-focused teaching, thereby partially proving Hypothesis 2, which suggested that leveraging visual and auditory learning strengths through such strategies can enhance phoneme recognition and production.

Finally, while teachers strongly believe in the value of early and consistent language intervention and reported anecdotal improvements in speech and communication, the study lacked longitudinal or quantitative data to confirm measurable progress. Therefore, Hypothesis 3 remains inconclusive, though the feedback from teachers is promising and suggests a need for further research in this area.

Overall, the study's findings suggest that, while primary school English instructors have a generally balanced experience dealing with pupils with Down syndrome, many lack official

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training and experience, with the majority having less than three years in the profession. This emphasizes the necessity for specific professional growth. Although instructors have a general awareness of speech development in pupils with Down syndrome, there is a considerable knowledge gap in terms of particular concerns such as pronunciation difficulties—especially with complex consonant sounds like /r/, /l/, and /th/—low vocabulary, and word recognition. The present phonics program was seen as reasonably successful, but it requires upgrading to better suit the needs of these pupils. Interviews revealed that, despite their lack of formal training, teachers are highly motivated to adapt their teaching strategies, relying on practical experience and employing techniques such as simplifying language, incorporating visual aids, repeating tasks, and cultivating a supportive and calm classroom environment. Teachers frequently highlight the value of engaging activities, such as role-playing and music, in promoting learning in a relaxed setting. Overall, the findings suggest the necessity for a broad, compassionate, and adaptable approach to teaching speaking skills to pupils with Down syndrome.

### **3.4 Some Suggestions and Pedagogical Recommendations**

Based on the results found in this research, many suggestions and recommendations can be made to help primary school pupils with Down syndrome increase their English-speaking skills. One of the most essential proposals is to provide specialized teacher training. Especially those teachers with less than three years of experience, they do not have professional training in dealing with pupils with Down syndrome. Professional development programs should be created to help instructors have a better knowledge of the unique challenges and struggles these pupils face, such as pronunciation problems, limited vocabulary, and word recognition. Furthermore, training should focus on practical methods and resources to use in the classroom, such as reducing language, using visual aids, and repetition into assignments.

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Another important point for improvement is the curriculum design. The current phonics curriculum in Algeria, while reasonably effective, but should be modified to better meet the requirements of pupils with Down syndrome. Phonics education should focus on multisensory learning techniques, letting Down syndrome pupils participate in hands-on activities that build their language skills. Furthermore, teachings should be reduced into smaller, more easier steps, making assignments simple to learn for these pupils. This would allow for the progressive development for their abilities.

Creating a supportive atmosphere is also required for pupils with Down syndrome to succeed. Teachers should focus on creating a fun joy able and supportive environment in which pupils feel safe, and comfortable. support peer collaboration through group activities and to improve language practice in a social setting, which is essential for improving speaking abilities. Furthermore, multisensory and engaging activities like role-playing and music should be incorporated into sessions. These exercises create a pleasant, fun environment for students to practice speaking, reducing some of the stress involved with language acquisition. Visual aids, such as flashcards and images, should also be utilized frequently to help in language acquisition.

In terms of pedagogical recommendations, differentiated education is critical for matching each student's individual requirements. Teachers should adjust their teaching approaches to their students' specific skills, providing tailored learning paths and altering exercises to accommodate different levels of comprehension. This strategy ensures that each pupil may proceed at their own speed while also allowing teachers to give additional help as required. Teachers should also focus regular feedback and reinforcement, providing positive encouragement and prizes to assist pupils gain confidence. Repetition and regular review of vocabulary, phrases, and sentence structures should be included into everyday activities, since pupils with Down syndrome frequently benefit from reinforced learning over time.

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Collaboration with special education teachers or speech therapists is another suggested method. Co-teaching practices can give additional assistance to pupils with Down syndrome, ensuring that their speech and language requirements are satisfied from both an academic and therapeutic perspective. Educational technology may also be an excellent instrument to foster speech development. Apps and interactive language programs meant to improve language abilities can give pupils with exciting and self-directed chances to practice speaking. Finally, parental engagement is critical in reinforcing the skills learned in school. Teachers should collaborate closely with parents to promote consistent learning at home and to give advice on how parents may help their pupil's language development via everyday activities.

Teachers will be more capable to address the requirements of pupils with Down syndrome by adopting these suggestions and pedagogical guidelines, giving them the assistance, they need to effectively improve their English-speaking abilities. Creating a more inclusive, supportive, and engaging learning environment would greatly benefit these pupils' educational experience and development.

### **3.5 Limitations of The Study**

Every study has limitations, and this one is no different. One of the most difficult challenges encountered throughout this research were the restricted time that was available for data collection and observation. Although the study planned to investigate the difficulties pupils with Down Syndrome have in developing English speaking abilities, the time spent in the schools was limited and hard to manage, which may not have captured the full range of their learning experiences and growth. Furthermore, the study was conducted in multiple different primary schools in Ain Temouchent, the focus was on a small group of teachers inside a specific region which are English teachers, there was found that the same one teacher works

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on multiple primary schools. As a result, the findings may not accurately reflect the experiences of all pupils with Down Syndrome in various educational or cultural situations.

Additionally, some schools did not allow the questionnaire to be given to English teachers. Some teachers as well did not consent to have their interviews audio-recorded, which required the researcher to write down their answers and remember each detail.

### **3.6 Conclusion**

This chapter presented a quantitative and qualitative analysis of data collected through two research instruments namely the online questionnaire administered to primary school English teachers and face-to-face interviews with teachers. The analysis aimed to examine the difficulties Down syndrome pupils face in developing English speaking skills at the primary level. The chapter summarized the key findings and tested the previously established research hypotheses in the introduction. It then proposed recommendations and suggestions to facilitate teaching Down syndrome pupils.

# **General conclusion**

### General Conclusion

Inclusion as a process of providing all the different requirements of all pupils is gaining significant support around the world, as seen by an increasing number of international meetings. Pupils with Down syndrome are concerned about this inclusion; they are described as having learning challenges, particularly those of primary school age.

This research was a sum of three chapters. The first chapter was divided into three parts. The first part is concerned about linguistics to understand what linguistics is through explaining psycholinguistics and neurolinguistics for further information, the second part discussed the theoretical perspectives on language learning acquisition and phonetics. The last part investigates the definition of Down syndrome and the causes of having it, also the physical features of pupil with Down syndrome. The second chapter represented the field work of the study. Throughout it, we described the instrument used to collect data from English primary school teachers through online questionnaire and an interview to analyze their perspective towards teaching Down syndrome pupils. The results that we have come with those pupils with Down syndrome learn more slowly and need more help than other pupils. In addition, lack official training and experience for teachers and also phonics program was seen as reasonably successful, but it required upgrading to better suit the requirements of Down syndrome pupils. Moreover the purpose of the questionnaire is to gather information about the challenges Down syndrome pupils face on their pronunciation and also the teachers' challenges while teaching these pupils. In the second part teachers' interviews were conducted, the interviewers took a period of 15 days, they were conducted from February 10 – March 24, 2025. Ten teachers were

## General conclusion

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interviewed individually. The interviews contain 10 questions designed according to specific aims and purposes. They included some direct questions at the same time; the researcher intentionally asked indirect questions in order to know teachers' perspectives towards the challenges faced by Down syndrome pupils in their pronunciation and also and their experience in teaching pupils with Down syndrome. The results showed that teachers are strongly motivated to enhance their teaching approaches based on their practical experiences. Despite their little knowledge, they are engaged in looking for ways to help these pupils overcome obstacles such as pronunciation difficulties, memory retention concerns, and processing delays. they also recommend a diverse, patient, and adaptive strategy to enhancing pupils speaking skills with Down syndrome. The results of this study led us in the third chapter to suggest some practical implications for teachers and authorities to include special training for teachers before teaching Down syndrome pupils and the current phonics curriculum in Algeria should be modified to better meet the requirements of pupils. More than this, we provided some recommendation that teachers should adjust their teaching approaches to their pupils' specific skills and they should also focus regular feedback and reinforcement, providing positive encouragement and prizes to assist pupils gain confidence and make life easier for these children.

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# Appendices

## Appendix 01

### Teachers' Questionnaire

Dear teachers,

This questionnaire tends to gather information from English teachers about the response of pupils with Down syndrome to the Algerian primary educational program, to identify the challenges, evaluate the current teaching methods, explore recommendations for improving speaking skills development.

**1. Gender**

- Male
- Female

**2. Name of the primary school**

.....

**3. How many years of teaching experience do you have with Down syndrome pupils?**

- Less than one year
- 1-3 years
- More than 3 years

**4. How familiar are you with the speaking development stages in children with Down syndrome?**

- Very familiar

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- Somewhat familiar
- Not familiar

**5. What challenges do Down syndrome pupils face in your experience?**

- Pronunciation difficulties
- Word recognition issues
- Difficulty differentiating sounds
- Limited vocabulary development

**6. What specific strategies have you used to support speaking skills in Down syndrome pupils?**

.....

**7. Do you think the Algerian program's phonics materials and teaching methods are effective for Down syndrome pupils?**

- Yes, very effective
- Somewhat effective
- Not effective

**8. What modifications or additional resources would you recommend to enhance the speaking skills of down syndrome pupils within the Algerian educational program?**

.....

**9. Do you think teacher training programs adequately prepare educators to address the needs of pupils with Down syndrome?**

- Yes
- No

### Appendix 02

#### Teachers' interview

Dear teachers,

This research aims to investigate the challenges that Down syndrome pupils face during their learning process in the current curriculum Algerian design in Ain Temouchent primary schools, you are kindly requested to answer the following questions:

##### **Section 1: General introduction**

- 1 – How many years have you been working as an EFL teacher ?
- 2 – Are you familiar with pupils with Down syndrome ?
- 3 – Have you received any training before working with pupils with Down syndrome ?

##### **Section 2: General challenges**

- 1 – Based on your experience, what are the main challenges pupils with Down syndrome face in developing English speaking skills ?

##### **Section 3: Cognitive and developmental factors**

- 1 – Are there specific sounds, words, or grammar rules that seem particularly challenging for them ?
- 2 – To what extent do memory or processing issues impact their ability to learn and use spoken English ?

##### **Section 4: Teaching strategies and interventions**

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1 – What teaching strategy or method have you used and found it effective for supporting Down syndrome pupils speaking skills ?

2 – Could you share any specific activities or tools that have been helpful ?

### **Section 5: Environmental and contextual factors**

1 – How does the classroom environment influence their ability to learn English speaking skills ?

### **Section 6: Recommendations**

2 – Which suggestions and recommendations you can offer to ameliorate speaking skills with Down syndrome?

### ملخص

تتناول هذه الدراسة الصعوبات التي يواجهها طلاب المرحلة الابتدائية من ذوي متلازمة داون عند تعلم التحدث باللغة الإنجليزية. وتبحث في الجوانب المعرفية واللغوية والاجتماعية التي تعيق عملية التواصل اللفظي، بما في ذلك محدودية اكتساب المفردات، وصعوبات وضوح النطق، وبطء معالجة اللغة. وتبرز الدراسة أهمية استخدام استراتيجيات تعليمية مخصصة وتهيئة بيئات تعليمية داعمة لتعزيز تنمية المهارات اللغوية لدى هؤلاء التلاميذ.

**الكلمات المفتاحية:** متلازمة داون، مهارات التحدث باللغة الإنجليزية، صعوبات التواصل، اكتساب المفردات، استراتيجيات تعليمية مخصصة

### Summary

This study looks into the difficulties that primary-level students with Down Syndrome ‘have when learning to speak English. It investigates the cognitive, linguistic, and social aspects that hinder verbal communication, including restricted vocabulary acquisition, speech intelligibility difficulties, and delayed language processing. The study emphasizes the need of personalized teaching tactics and supportive learning settings to encourage language development in these pupils.

**Keywords:** Down Syndrome, English speaking skills, Communication difficulties, Vocabulary acquisition, Personalized teaching strategies

### Résumé

Cette étude examine les difficultés rencontrées par les élèves du primaire atteints de la trisomie 21 dans l'apprentissage de la langue anglaise orale. Elle explore les aspects cognitifs, linguistiques et sociaux qui entravent la communication verbale, notamment l'acquisition

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limitée du vocabulaire, les problèmes d'intelligibilité de la parole et le traitement lent du langage. L'étude souligne l'importance de stratégies pédagogiques personnalisées et d'environnements d'apprentissage favorables pour encourager le développement linguistique chez ces élèves.

**Mots-clés:** Trisomie 21, Compétences orales en anglais, Difficultés de communication, Acquisition du vocabulaire, Stratégies pédagogiques personnalisées